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## Airborne air lab measures pollution

NEWINGTON, N.H. (AP) — The below-average number of smoggy days this summer has been good news for New England residents, but bad news for scientists who have been using a flying laboratory to study the region's air pollution.

The NOAA ship *Ronald H. Brown* is taking part in the pollution study.

By Tim Boyd, AP

"You need sunlight to produce ozone," said Robert Talbot, director of the University of New Hampshire's Airmap Cooperative Institute. "We haven't had a lot of it here, but it's been pretty clear out over the Atlantic, actually, and we're seeing a lot of ozone generated just off the coast that normally occurs over the continent."

The 35 researchers working aboard the DC-8 that serves as NASA's flying laboratory are taking part in a study known as the International Consortium for Atmospheric Research on Transport and Transformation, or ICARTT. (**Related item:** ICARTT Web site)

Officials say it is the largest and most complex air-quality study ever conducted. Based at UNH, the six-week project involves a dozen aircraft, three satellites, a 274-foot research ship, a "smart balloon" and a network of 50 ground-based observation sites from Mount Washington to Nova Scotia and the Azores.

Every summer, plumes of pollution drift from the Midwest over New England and Europe. Scientists hope to use air quality data collected aboard the plane to improve their understanding of climate change, and to develop new, daily air quality forecasts that will be launched in New England this fall.

Researchers aboard the DC-8 hunker down behind the scientific instruments that fill the plane from nose to tail,



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studying water vapor, gases and airborne particles on nine-hour flights that cost about $500,000 each.


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"They're measuring a large number of chemicals, the products that they form, and ultimately what happens to them," said Hanwant Singh, the lead scientist on the plane.

Air-sucking probes have replaced the windows in the plane's fuselage. Scientists study the samples while in flight to identify pollutants. Other equipment measures water vapor levels 100 times per second throughout the flight, or records levels of peroxides and gases like carbon monoxide, methane and nitrous oxide.

Communication between scientists and the jet's pilots is coordinated at a mission-control station near the front of the plane. Scientists and pilots all work to make sure others know what their instruments are picking up in the surrounding air.

"We try to keep in communication with the rest of the science team and when we see something interesting happening, to tell them what's going on so we can really try to get a first-cut understanding of what's happening in real time," said Jim Podolske, a scientist with NASA's Ames Research Center in California.

Scientists request changes in the flight path based on readings from their instruments. On a recent trip, the DC-8 flew from Portsmouth, N.H., to Florida and Georgia before heading back to New England and the Canadian border.

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